De Anza College
CHEMISTRY 10
MECHANICS OF THE COURSE
Winter '2017

Due to the high demand for this class, any student missing any class the first two weeks will be dropped to make room for another student. Be sure to be in class on time. Allow extra time to find a parking place. Also any student leaving class early will be dropped.

I. **Instruction - Mr. Howard Garnel**

E-mail: garnelhoward@deanza.edu

II. **Office Hours** – Tues and Thurs 10:30 to 11:30 AM

SCI Up Stairs, Faculty Offices, Across from the Chemistry Labs

II. Purpose of the Course –The course emphasizes chemistry as a subject of scientific inquiry and is designed to give the student a general appreciation for chemistry as a science.

III. Textbooks - **"Chemistry for Changing Times"**, Hill , **14th Ed., 2016**

"**Laboratory Manual – Conceptual Chemistry**", 5th Edition, **Gibson and Suchochi, 2014** *Do not purchase a used Lab Manual without first checking to determine that all pages for our experiments are present.*

Other Items Needed – Safety Goggles (only the type available in the bookstore are acceptable. NO EXCEPTIONS, and a NON-Programmable (non-graphing) "Scientific" calculator (TI 30A Series recommended) (Needed First day of class)
Cell phones my not be used in class as a calculator at any time. If you have a cell phone out in class you will be asked to leave the class.

IV. Grading -

Exams (3)	100 points each
Homework	100 points
Quizzes	100 points total
Final Exam	100 points
Lab Reports 9	100 points total
Environmental Report	30 points

Nine lab reports will be graded on a 20 point basis, giving 180 points. This will be divided by 1.8 to yield 100 possible points for the Lab portion of this class.

Semester grades will be based on the total number of points accumulated at the end of the semester out of 600 possible points, **90% for an A, 80% for a B, 70% for a C and 60% for a D**. Grades of incomplete, **"I"** will be given only for documented extenuating circumstances. These minimum percentages may be lowered at the instructor's discretion, but they will not be

raised<mark>. It is the **student's responsibility** to keep a record of his/her scores on labs, quizzes and exams in order to determine his/her standing in the class.</mark>

Cheating will not be tolerated in any manner. Any evidence of **dishonesty** in class regarding exams and/or lab reports will be used as a potential basis for **dismissal** from this course with a grade of **"F".** In the lab all students must perform his/her **own** work and only use his/her own data unless approved by the instructor. Use of someone else's data, calculations etc. is dishonest and will be treated as such.

All work turned in to me asking for your name, must be shown as
LAST NAME, FIRST NAME (-1 point each time if not in this manner)

V. Labs, Quizzes, Homework and Exams –

Labs - There will be **9** experiments that <u>must be completed </u>to obtain a passing grade in this class. In order for you to perform these experiments you must...

1. Have your own personal safety goggles. (Keep these in your lab locker)

2. Lab reports will be due at the **beginning of your next lab (1 week later after completing the experiment) at 11:30 AM**. Lab reports will be considered late after 11:30 AM. Be sure to be in class on time. **Late** "Lab Reports" will be graded for **half** credit up to one week late. After that they will receive no points. All labs must be completed to receive a passing grade in the course. Lab reports will not be graded for credit after 1 week from the due date.

3. In addition the instructor reserves the right to prohibit any student from working in the lab if in the instructor's judgment, a student presents a safety hazard to himself/herself or any other person(s) in the class.

4. In the lab you may work with **one** partner (**ONLY ONE**). Both students are expected to be performing and recording their data throughout the experiment <mark>(NO COPYING YOUR PARTNERS DATA AT THE END OF THE LAB -5 points if you do this).</mark> Each student is expected to **actively** participate in performing each experiment in the lab.

5. If you are unable to complete an experiment due to absence (for any reason) you may satisfy the requirement for that lab by writing a 2 or 3 page paper on **a full feature article (6-8 pages)**, from **ANY** issue of **Scientific American** on a topic dealing with some **aspect of chemistry**. **Be sure to include a copy of the article with the paper**. Scientific American is available online, in the library, Barnes and Noble, etc. The paper (like the lab report) is due **<u>at the same time the missed lab</u>** is due and will loose points for being late just like a lab report. The paper must show that you have completely read and comprehend the article. You may also have to discuss the article with the instructor. Only **ONE** missed lab may be made up in this manner. **If a second lab is missed for any reason you will automatically be dropped from the class with a failing grade**. There is no time outside of class for make-up experiments.

7. The last day to turn in **all** lab work is <mark>Mar 21 (Tues Lab) or Mar 23 (Thurs Lab)</mark> at **11:30 AM.** Lab work will not be graded for credit after that. This includes all lab reports, worksheets and Scientific American Reports (if any).

Quizzes – There will be between 8 and 12 quizzes in lecture. I will drop one quiz (your lowest). If we have 12 or more I will drop your two lowest quizzes. The quizzes will be worth 100 points (**equivalent to one exam**). Each quiz will be graded on a ten point basis. There are no make-up quizzes. If you miss a quiz for any reason, that will be the quiz that is dropped. If you miss more than one quiz you will receive a zero on any additional quizzes that are missed. This is another reason to attend all classes and be on time. You will not get extra time if you are late to class. Quizzes are unannounced, but you should expect one in almost every lecture session. Any questions regarding the grading of a quiz must be presented and resolved on the day that the quiz is returned to you.

Homework - Homework will be worth 100 points towards your grade in the class.

Each worksheet will be graded on a 10 point basis. The total number of points accumulated will then be divided by the number of points possible and then multiplied by 100. E.g. If we have 16 worksheets and you have a total of 85 points then your points for homework will be 85/160 * 100 or 53 points. There will be at least 14 worksheets. Homework (all worksheets associated with that exam) will be due in the beginning of class at 2:30 PM, after 2:30 PM it is late) on the day of each exam. Late homework will be graded at half credit up to one class late. No credit after that. Only original work will be accepted. All work must be neat and legible. Worksheets must be in proper order e.g. Cover sheet, 1, 2, 3, 4 and 5. One staple in the upper left hand corner of all pages. There is no stapler in class. No loose sheets will be accepted. Only half credit if difficult to read. Absolutely no photocopies of your homework will be accepted.

Environmental Report - Chemistry is largely responsible for the quality of life that we enjoy today. Never before have we benefited so much from the advancement of chemistry (food supply, medicine, transportation just to name a few). This progress comes at a price to the environment and future generations. In addition to a special lecture on this topic, students are required to write a short report on an environmental concern. The report should be no more than 1 or 2 pages (double spaced, Font 12). It should deal with the impact of one area of Chemistry on the environment. The project is designed to promote critical thinking on the part of the student. The student is to propose possible ways to deal with the problem. This is Due on Thurs Mar 16, 2017 at 2:30 PM. After 2:30 PM it will be considered late. Half credit if turned in by 2:30 PM on Mar 21. No credit after that. It will be worth **30 points**.

Exams – Only **NON-programmable (graphing calculators are programmable)** Scientific calculators may be used on exams and quizzes. Make-up exams can be given only for **documented** legitimate cause. If you cannot take a scheduled exam, notification must be given to the instructor **prior** to the exam by e-mail (**garnelhoward@deanza.edu**). Be sure to leave a phone number where I can reach you that day. Unless I approve of your absence a missed exam represents a **zero** and cannot be erased. Arrangements must be made at this time for a make up. Also **no exams will be dropped** in this class (all exams are used to compute your final grade in the class).

- Please do not attempt to **plea bargain** more points on graded papers (**labs, quizzes** & **exams**).

- There is no extra credit available in this class.

VI. Instructional Methods - The class is taught in a lecture-discussion format.   Much complex material is contained in this class. In order for you to effectively learn this material it is inherent that you properly prepare for each class. **This includes your reading the material prior to coming to class**. This is a very important part of the learning process and will significantly enhance your ability to comprehend the material.

You should plan on study time of **at least 2 hours** for **each hour** of lecture for you to be successful in this class. Trust me this is necessary for the class<mark>. If you cannot commit to this, you will not be successful in this class.</mark>

It is also imperative that you review and practice the material presented as soon as is possible, after each lecture while the material is still fresh in your mind. The longer that you wait the more difficult it will be and will require significantly **more total time.**

You may even find that you will enjoy the class!!!!

VII. Specific Objectives - Students will be expected to answer questions and solve problems similar to those assigned for this class (text and worksheets).

VIII. Other Items –

- **Tardies** - Excessive tardies (**more** than **two** for the quarter) may result in a **lowering** of your grade.
- **Attendance** - Students are expected to attend all classes. A student may be dropped for excessive absences. See college policy in the **current college catalog**. If a student wishes to drop a class, it is his/her responsibility to complete the drop process **including checking-out in the lab**. If he/she does not do this and is still on the roll at the end of the quarter a grade of **"F"** will be received in the class. Also I will **not** back date drop slips.
- All **electronic communications & music devices (cell phones, ipods, mp3 players etc.)** must be turned off in both **lecture** and **lab (and no earphone in your ears)**. It is **NOT OK** to leave lecture to answer cell phones. This is disruptive to the class and not fair to your fellow students. **Texting** during class will be grounds for removal from class. Failure to follow these rules will result in **expulsion from this class**. Please do not let this happen.
- Be sure to remove hats, hoods, ear-phones etc in class (Lecture and Lab).
- Shorts may not be worn in the Lab at any time.
- If a student's behavior is disruptive to the class, the instructor may remove the student from the class. If it happens more than once the instructor may drop the student from the class with a grade of "F" in the class.
- Be sure to sit only in the your designated seat for the class.

IX. Final Exam – Thurs Mar 30 1:45 – 3:45 PM   I will not accommodate requests for an alternate day or time (no exceptions).

12/28/2016

Winter 2017	CHEMISTRY 1	H. Garnel

Chemistry for Changing Times 13 th Ed (4 th Ed for DeAr

LECTURE AND STUDY ASSIGNMENT SHEET

LECTURE ASSIGNMENT	SECTIONS	PAGES	PROBLEMS/Exercise
Chapter 1"Chemistry" (Matter and Math)			
Matter, Measurements, Significant	1.5 - 1.6	12 - 19	29 - 41 (odd)
Figures (1) & Dimensional Analys	1.7	19 - 24	45 - 51 (odd)
Worksheets # 1 and # 2			
Density (4)	1.8	25 - 27	53 - 57 (odd)
Heat (Cal & Joules) & Temp (˚C	1.9	27 - 30	65 - 67 (odd)
Chapter 2 "Atoms"			
The Periodic Table (6)	2.5	54 - 56	
The Mole & Molar Mass	2.4	49 - 53	41, 43
Chapter 3 "Atomic Structure"			
Atomic Structure (7 & 8)	3.5	73 - 76	23 - 29 (odd)
Worksheet # 3			
Electron Configuration (9 & 10)	3.6 - 3.8	76 - 87	31 - 43 (odd)
Worksheet # 4			
Chapter 11 "Nuclear Chemistry"			
Chapter 3 Three Types of Radioa	3.3	70 - 73	
Nuclear Equations (11)	11.2	320 - 324	21 - 29 (odd)
Worksheet # 5			
Half Life & Radioisotopic Dating (1	11.3	324 - 329	31 - 41 (odd)
Artificial Transmutation	11.4	328 - 329	43, 45 (odd)
Uses of Radioisotopes	11.5	329 - 332	
Penetrating Radiation ((13)	11.6	332 - 334	47
Fission & Fusion	11.7 - 11.8	334 - 341	49
	<14>	Exam # 1	Tues, Jan 31, 2017
Chapter 4 "Chemical Bonds"			
Formulas & Names of Ionic Compo	4.5	104 - 107	17 - 29 (odd)
Polyatomic Ions (16)	4.9	114 - 116	
Chemical Bonds & Covalent Comp	4.6	107 - 109	39
Polar Covalent Bonds (17)	4.7	109 - 11	47, 49, 51
Worksheets # 6 & # 7			
Lewis (Electron-Dot) Symbols (18	4.1 - 4.2	96 - 98	11
Lewis Structures	4.1	116 - 121	41, 43
Worksheet # 8			
Molecular Geometry (19)	4.11 - 4.12	121 - 127	57
Worksheet # 9			
Chapter 5 "Chemical Accounting"			
Chemical Equations (20)	5.1	137 - 140	7 - 15 (odd)
Worksheet # 10			
The Mole (21)	5.3	143 - 145	23 - 31 (odd)
Worksheet # 11			
Stoichiometry (22,23)	5.4	146 - 151	35, 37
Worksheet # 12			
Solutions (24,25)	5.5	152 - 156	39 - 49 (odd)
Worksheet # 13			

Chapter 7 "Acids and Bases"

	SECTIONS	PAGES	PROBLEMS
Properties & Definitions (26)	7.1 - 7.2	190 - 196	
Strong & Weak Acids & Bases	7.4	198 - 201	
Neutralization	7.5	200 - 201	39, 41
Worksheet # 14			
pH (27)	7.6	201 - 205	43 - 51 (odd)
<28>	**Exam # 2, Thues Feb. 23**		

Chapter 8   "Oxidation - Reduction"

	SECTIONS	PAGES	PROBLEMS
Definition of Oxidation and Reduction	8.1 - 8.2	217 - 22	17 - 27 (odd)
Balancing Redox Equations (30)	8.3	225 - 23	33 - 37 (odd)
Worksheet # 15			

LECTURE AND STUDY ASSIGNMENT SHEET

LECTURE ASSIGNMENT	SECTIONS	PAGES	PROBLEMS
Chapter 9 "Organic Chemistry"			
Alkanes,Alkenes & Alkynes (31)	9.1	251 - 26	17 - 25 (odd)
Aromatic Hydrocarbons	9.2	260 - 261	
Functional Groups (32)	9.4	263 - 264	
Alcohols, phenols & Ethers (33)	9.5	265 - 269	27, 29, 31
Aldehydes and Ketones (34)	9.6	270 - 272	33
Acids & Esters (35)	9.7	272 - 275	35, 37
Amines & Amides (36)	9.8	275 - 278	39

LECTURE ASSIGNMENT	SECTIONS	PAGES	PROBLEMS
Chapter 10 "Polymers"			
Monomers & Polymers (37)	10.1	288-289	
Polyethylene (38)	10.2	289 - 292	
Addition Polymerization (39)	10.3	293 - 297	
Rubber	10.4	297 - 299	
Condensation Polymers (40)	10.5	299 - 304	
<41>	**EXAM # 3**	**Tues Mar 21, 2017**	
Chapter 16 "Biochemistry"			
Energy & The Living Cell (42)	16.1	479 - 481	
Carbohydrates	16.2	481 - 484	17 - 27 (odd)
Fats & Lipids (43)	16.3	484 - 486	31 - 37 (odd)
Proteins	16.4	487 - 491	39 - 47 (odd)
Structure of Proteins (44)	16.5	491 - 497	
Nucleic Acids	16.6	497 - 502	51 - 55 (odd)
RNA	16.7	502 - 504	59 - 67 (odd)
The Human Genome	16.8	504 - 507	

(x) Blue numbers refer to the lecture number (4/week for 11 weeks)

Final Exam **Thurs Mar 30 1:45 - 3:45 I**

Except for the Final Exam, Exam Dates are Subject to Change

DeAnza College Chem 10   Win '17   Lecture and Laboratory Schedule (Tentative)

WEEK	Lecture	Lecture Content	Lab (Tues or Thurs)
1	**Jan 10, 12** (1,2,3,4) Chapters 1, 2	Matter, Phy & Chem Changes. Measurements and sig Figs. Dimensional Analysis, Density, Heat and Energy. The Periodic Table	**Jan 10, 12** Lab Check - In Safety and Balances
2	**Jan 17, 19** (5,6,7,8) Chapter 3 (Last Day to Drop with no record of grade) Sunday Jan 22, 2016	Nuclear model of the atom, Atomic Structure. Bohr model. Electron configuration of atoms.	**Jan 17, 19** Taking Measurements
3	**Jan 24, 26** (9,10,11,12) Chapter 4	Nuclear Chemistry. Isotopes. Radioisotopes. Nuclear Medicine. Effect of ionizing radiation.	**Jan 24, 26** Percent Water in Popcorn
4	**Jan 31, Feb 2** (13,14,15,16) Chapter 5 Exam # 1 (Tue, Jan 31) Chapters 1 – 4 (50 min)	Chemical Bonding. Electron-dot structures. Formulas of Covalent Compounds	**Jan 31, Feb 2** Electron Dot Structures
5	**Feb. 7, 9** (17,18,19,20) Chapter 5	Molecular Geometry, VSEPR Theory Naming Ionic Compounds. Polyatomic ions.	**Feb 7, 9** Molecular Shapes
6	**Feb 14, 16** (21,22,23,24) Chapter 6	Balancing Chemical Equations. Avogadro's number and the mole. Stoichiometry. Solutions	**Feb 14, 16** Solutions
7	**Feb 21, 23** (25,26,27,28) Chapter 7 Exam # 2 (Thu, Feb 23) Chapters 5 - 7 (50 min)	Acids and Bases. pH	**Feb 21, 23** Upset Stomach
8	**Feb 28, Mar 2** (29,30,31,32) Chapter 8 (Last Day to Drop with a grade of "W") Friday Mar 3, 2016	Redox reactions, Electrochemistry and Corrosion.	**Feb 28, Mar 2** Organic Molecules
9	**Mar 7, 9** (33,34,35,36) Chapter 9	Hydrocarbon Chemistry. Isomers, Aliphatic and Aromatic hydrocarbons. Functional Groups.	**Mar 7, 9** How Much Fat?
10	**Mar 14, 16** (37,38,39,40) Chapter 10	Polymerization. Rubber. Properties of Polymers.	**Mar 14, 16** DNA Capture
11	**Mar 21, 23** (41,42,43,44) Chapter 15 Exam # 3 (Tue, Mar 21) Chapters 8 - 10 (50 min)	Biochemistry. Molecular Structures. DNA – genetic code. RNA – protein synthesis.	**Mar 21, 23** Lab Check – Out
12	**Thurs Mar 30** Final Exam 1:45 PM – 3:45 PM		

Except for the Final Exam, exam dates are tentative